

**REMARKS**

In the Office Action, claims 1-93 were rejected. Reconsideration and allowance of all pending claims is requested.

**Rejections Under 35 U.S.C. § 103**

Claims 1, 9, 15, 18, 19, 22, 30, 36, 39, 40, 46, 54, 60, 63, 64, 70, 78 and 86 and dependent claims 2, 4-6, 8, 10, 12, 13, 16, 20, 23, 25-27, 29, 31, 33, 34, 37, 42, 44, 45, 47, 49-51, 53, 55, 57, 58, 61, 66, 68, 69, 71, 73-75, 77, 79, 81-83, 85, 87, 89-91 and 93 were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,223,143 (hereinafter "Weinstock") in view of U.S. Patent No. 6,067,486 (hereinafter "Aragones"). For a *prima facie* case of obviousness, the Examiner must set forth the differences in the claim over the applied reference, set forth the proposed modifications of the reference, which would be necessary to arrive at the claimed subject matter, and explain why the proposed modification would be obvious.

Applicants respectfully submit that Weinstock and Aragones, either alone or in combination, do not teach, disclose or suggest all of the features recited in independent claims 1, 9, 15, 18, 19, 22, 30, 36, 39, 40, 46, 54, 60, 63, 64, 70, 78 and 86. Specifically neither reference teaches, discloses or suggests building an engine baseline model for an ideal engine from preprocessed data, *wherein the engine baseline model relates engine performance variables as a function of engine operating conditions*. Accordingly, the combination of the references cannot possibly include these features of the claims, and thus cannot render the claims obvious.

**Claims 1, 9, 15, 18, 19, 22, 30, 36, 39, 40, 46, 54, 60, 63, 64, 70, 78 and 86 and claims depending therefrom.**

Weinstock discloses a quantitative risk assessment system (QRAS) that builds a risk model of a system for which risk of failure is being assessed, and analyzes the risk of failure corresponding to the risk model. More specifically, in Weinstock, a "baseline" is

created based upon simulations run at the lowest level, (i.e., the failure model level). These simulations are saved and stored as the "baseline" (col. 16, lines 57-59). Therefore, the "baseline" created by Weinstock stores *simulations*, thereby avoiding the need for continually generating scenario simulations and re-constructing and re-simulating all scenarios for each analysis run (col. 24, lines 29-32). The analysis runs then access the "baseline" for risk quantitative computation as well as for ranking of particular risks.

However, the "baseline" disclosed by Weinstock is not equivalent or even similar to the *engine baseline model* recited in the pending claims. The engine baseline modeling system claimed in the present patent application builds an engine baseline model for an ideal engine from preprocessed data and relates engine performance variables as a function of engine operating conditions. The engine baseline model thus developed may monitor engine status, predict future engine behavior, diagnose faults, determine when an engine performs out of specification, determine the quality of the engine, and be used for design of new systems for an engine. See, e.g., Application, page 5, line 29 - page 6, line 6.

There is no disclosure, teaching or even a suggestion in Weinstock of a system or a method for building an engine baseline model for an ideal engine from preprocessed data. Further, Weinstock does not disclose, teach or even suggest that the simulations stored as the baseline may be used to model ideal engine performance from preprocessed data, and relate performance variables as a function of engine operating conditions. In addition, Applicants have carefully reviewed the sections referenced by the Examiner (Figure 1, item 18-3, Figure 3, item S20, Figure 16, item S1102, Col. 3 lines 13-22, Col. 9 lines 62-67, Col. 10 lines 1-13, Col. 20 lines 16-24 and Col.24 lines 22-39) and submit that these sections fail to disclose building an engine baseline model for an ideal engine. One skilled in the art would therefore conclude that Weinstock appears *only* to teach performing a set of "simulations" and using a "baseline" to store the set of simulations, so

that re-constructing and re-simulating all the scenario simulations for each analysis run can be avoided. The only real similarity is the use of the term "baseline."

Aragones similarly fails to teach this recited feature, and indeed, the Examiner did not rely upon Aragones for teaching of an engine baseline model. Consequently, no combination of the references could render such inventive features obvious. In view of the above-noted distinctions, Applicants submit that claims 1, 9, 15, 18, 19, 22, 30, 36, 39, 40, 46, 54, 60, 63, 64, 70, 78 and 86 are neither the same as, nor in any way taught or suggested by Weinstock or Aragones taken either singly or in combination.

In view of the foregoing deficiencies in the teachings of the prior art, the references cannot establish a *prima facie* case of obviousness of claims 1, 9, 15, 18, 19, 22, 30, 36, 39, 40, 46, 54, 60, 63, 64, 70, 78 and 86. Accordingly, these claims are believed to be clearly patentable over the cited combination. Their reconsideration and allowance are respectfully requested.

Dependent claims 2, 4-6, 8, 10, 12, 13, 16, 20, 23, 25-27, 29, 31, 33, 34, 37, 42, 44, 45, 47, 49-51, 53, 55, 57, 58, 61, 66, 68, 69, 71, 73-75, 77, 79, 81-83, 85, 87, 89-91 and 93 depend from presumably allowable independent claims 1, 9, 15, 18, 19, 22, 30, 36, 39, 40, 46, 54, 60, 63, 64, 70, 78 and 86. Accordingly, these claims are believed to be clearly patentable over the cited combination. Their reconsideration and allowance are requested.

Claims 3, 7, 11, 14, 17, 21, 24, 28, 32, 35, 38, 41, 43, 48, 52, 56, 59, 62, 65, 67, 72, 76, 80, 84, 88 and 92 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Weinstock in view of Aragones and in further view of U.S. Patent No. 6,243,696 (hereinafter "Keeler"). As summarized above, all of the independent claims are patentable over the combination of Weinstock in view of Aragones. The Keeler reference has been reviewed with respect to the 35 U.S.C. § 103(a) rejection and fails to obviate the

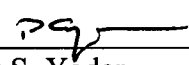
deficiencies of Weinstock in view of Aragonés in regards to building an engine baseline model to model the performance of an ideal engine. Accordingly, claims 3, 7, 11, 14, 17, 21, 24, 28, 32, 35, 38, 41, 43, 48, 52, 56, 59, 62, 65, 67, 72, 76, 80, 84, 88 and 92 are allowable by virtue of their dependency from allowable base claims 1, 9, 15, 18, 19, 22, 30, 36, 39, 40, 46, 54, 60, 63, 64, 70, 78 and 86. These claims are believed to be clearly patentable over the cited combination. Their reconsideration and allowance are requested.

**Conclusion**

In view of the remarks and amendments set forth above, Applicants respectfully request allowance of the pending claims. If the Examiner believes that a telephonic interview will help speed this application toward issuance, the Examiner is invited to contact the undersigned at the telephone number listed below.

Respectfully submitted,

Date: 5/10/2006

  
\_\_\_\_\_  
Patrick S. Yoder  
Reg. No. 37,479  
FLETCHER YODER  
P.O. Box 692289  
Houston, TX 77269-2289  
(281) 970-4545